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EXAMINER

MAYO III, WILLIAM H

ART UNIT

PAPER NUMBER

2831

DATE MAILED: 10/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/857,733

Applicant(s)

DAMMERT ET AL.

Examiner

William H. Mayo III

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 5-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 5-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 27 August 2003 is: a) ☐ approved b) ☒ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Drawings*

1. The drawings were received on August 27, 2003. These drawings are not approved because Figure 1 lacks the proper cross-hatching, which indicates the type of materials, which may be in an invention. Specifically, the cross hatching to indicate the **insulation and conductor** materials is improper. The applicant should refer to MPEP Section 608.02 for the proper cross-hatching of materials. Correction is required.
2. Applicant is required to submit a proposed drawing correction in reply to this Office action. However, formal correction of the noted defect may be deferred until after the examiner has considered the proposed drawing correction. Failure to timely submit the proposed drawing correction will result in the abandonment of the application.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

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under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-2, and 5-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Own Admission of Prior Art (herein referred to as AOAPA) in view of Dammert et al (WO Pat Num 95/17463, herein referred to as Dammert). AOAPA discloses under the heading "Technical Background" electric power cables for medium and high voltage cables (see Pages 1-4 of specification). Specifically, AOAPA discloses that medium to high voltage cables are known to comprise an electrical conductor surrounded in order by an inner semi-conducting layer, an insulating layer, and an outer semi-conducting layer (Page 1, lines 9-16), wherein the insulating layer is typically of more than 2mm thick (Page 4, lines 4-10), and comprises a cross linked polymer of a composition that comprises a cross linkable polymer (i.e. ethylene polymers, Page 3, lines 8-10) with a hydrolysable silane group and a silanol condensation catalyst (Page 3, lines 10-18), such as dibutyl tin diaurate (DBTDL, Page 3, lines 19-23). With respect to claim 2, AOAPA discloses that a typical insulating layer will have a thickness of more than 5mm (Page 4, lines 7-10). With respect to claim 9, AOAPA discloses a method of preparing the typical medium and high voltage power cable, wherein a conductor is surrounded in order an inner semi-conducting layer, an insulating layer comprising a cross linkable polymer (ethylene polymer) with a hydrolysable silane groups (DBTDL) and an outer semiconducting layer to form the

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cable (Pages 1 & 3, lines 9-16 & 8-23), in the presence of superatmospheric steam (Page 3, lines 12-15). With respect to claim 10, AOAPA discloses that crosslinking is commonly done in a vulcanizing tube (Page 2, lines 14-25). With respect to claims 11-12, AOAPA discloses that the cross linking is capable of being carried out at a pressure of 0.2-2.5 Mpa or 0.8-1.2 Mpa (i.e. extrusion pressures). With respect to claim 13, AOAPA discloses that crosslinking is carried out in the presence of saturated steam (Page 3, 12-15).

However, AOAPA doesn't disclose the silanol condensation catalyst being of formula I,  $\text{ArSO}_3\text{H}$ , or a precursor thereof, Ar being a benzene ring substituted with at least one hydrocarbyl radical such that the total number of carbon atoms of the hydrocarbyl radical is 8-20, or a naphthalene ring substituted with at least one hydrocarbyl radical such that the total number of carbon atoms of the hydrocarbyl radical is 4-18, and the catalyst of formula I contains 14-28 carbon atoms in total wherein the hydrophilic composition comprises a hydrophilic group being selected from siloxane, amide, anhydride, carboxylic, carbonyl, hydroxyl, and ester groups (claim 1), nor the crystalline part of the polymer being at most 60% by weight (claim 5), nor the hydrocarbyl radical in formula I being an alkyl substituent with 10-18 carbon atoms (claim 6), nor the alkyl substituent having 12 carbon atoms and selected from dodecyl and tetrapropyl (claim 7), nor the polymer composition including 0.0007-3% by weight of silanol condensation catalyst (claim 8).

Dammert teaches cross linkable polymer composition containing a crosslinkable polymer with hydrolysable silane groups and at least one silanol condensation catalyst

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that reduces or obviates the drawbacks of prior art catalysts, such as DBTDL, that give poor performance at normal temperatures and do not require the presence of water baths or steam cabinets, during the crosslinking production of cable insulations (Pages 2-3, lines 34-37 & 1-5). Specifically, with respect to claim 1, Dammert teaches a cross linkable polymer composition containing a hydrolysable silane group and at least one the silanol condensation catalyst being of formula I,  $\text{ArSO}_3\text{H}$ , or a precursor thereof, Ar being a benzene ring substituted with at least one hydrocarbyl radical such that the total number of carbon atoms of the hydrocarbyl radical is 8-20 (Page 3, lines 25-37), and the catalyst of formula I contains 14-28 carbon atoms in total (Col 4, lines 19-24). With respect to claim 3, Dammert teaches that the typical composition contains a cross linkable polymer (ethylene) may include hydrophilic groups such as carboxylics (Page 5, lines 21-28). With respect to claim 4, Dammert teaches that the typical composition contains a cross linkable polymer (ethylene) may include hydrophilic groups such as carboxylics (Page 5, lines 21-28). With respect to claim 5, Dammert teaches that the cross-linkable polymer composition comprises a crystalline part of the polymer that may be at most 60% by weight (i.e. up to 60, Page 8, lines 12-15). With respect to claim 6, Dammert teaches that the hydrocarbyl radical in formula I may be an alkyl substituent with 10-18 carbon atoms (i.e. 12, Page 4, lines 19-24). With respect to claim 7, Dammert teaches that the alkyl substituent has 12 carbon atoms (Page 6, lines 30-31) and may be selected from dodecyl and tetrapropyl (Page 6, lines 24-25). With respect to claim 8, Dammert teaches that the polymer composition includes 0.0007-3% by weight of silanol condensation catalyst (Page 5, lines 3-9).

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With respect to claims 1 & 5-8, it would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the insulating layer of AOAPA to comprise the polymeric component configuration as taught by Dammert because Dammert teaches that such a composition configuration reduces or obviates the drawbacks of prior art catalysts, such as DBTDL, which give poor performance at normal temperatures and does not require the presence of water baths or steam cabinets, during the crosslinking production of cable insulations (Pages 2-3, lines 34-37 & 1-5).

### ***Response to Arguments***

6. Applicant's arguments filed August 27, 2003 have been fully considered but they are not persuasive. Specifically, the applicant argues the following:

- A) The examiner has failed to provide a proper prima facie case of obviousness because there is no suggestion or motivation to combine the teachings of AOAPA and Dammert.
- B) Dammert is disclosing characteristics of additional catalysts that can be used and not characteristics of the crosslinkable polymer, wherein the claimed invention crosslinkable polymer has hydrophilic groups selected from siloxane, amide, anhydride, carboxylic, carbonyl, hydroxyl, and ester groups.

With respect to argument A, the examiner respectfully traverses. The examiner recognizes that obviousness can only be established by combining or modifying the

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teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, AOAPA clearly discloses that medium to high voltage cables are known to comprise an electrical conductor surrounded in order by an inner semi-conducting layer, an insulating layer, and an outer semi-conducting layer (Page 1, lines 9-16), wherein the insulating layer is typically of more than 2mm thick (Page 4, lines 4-10), and comprises a cross linked polymer of a composition that comprises a cross linkable polymer (i.e. ethylene polymers, Page 3, lines 8-10) with a hydrolysable silane group and a silanol condensation catalyst (Page 3, lines 10-18), such as dibutyl tin diaurate (DBTDL, Page 3, lines 19-23) for the purpose of preventing water treeing. Dammert clearly teaches that cross linkable polymer compositions containing a crosslinkable polymer with hydrolysable silane groups and at least one silanol condensation catalyst utilizing DBTDL suffer from disadvantages, such as poor performance at normal temperatures when utilized as cable insulations wherein it is desirable that the polymer composition can be crosslinked at room temperature without the use of water baths or steam cabinets (Pages 2-3, lines 34-37 & 1-5). Dammert goes on to state that his present crosslinked polymer composition overcomes the disadvantages of the prior art cross linkable polymer compositions containing a crosslinkable polymer with hydrolysable silane groups and at least one silanol condensation catalyst utilizing DBTDL, by incorporating silanol condensation catalyst



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that permit crosslinking of silane containing polymer compositions at room temperature thereby providing excellent performance at normal temperatures (see the rest of page 3). Not only does Dammert teach an alternate polymer composition for insulating cables, Dammert also teaches that the specific material DBTDL that is utilized in the prior art composition of AOAPA as being inferior in the art of cable insulations. This is exactly the same basis the applicant has stated in the Background of Invention of the claimed invention for filing the present invention. Based on the teachings of Dammert, there clearly exist a motivation for modifying the crosslinkable polymer composition containing DBTDL of the prior art with the crosslinkable polymer composition as taught by Dammert to overcome the disadvantages of the prior art composition. Secondly, Dammert also clearly teaches that there exist a reasonable amount of success for replacing the DBTDL material, because his invention concept does just that. Clearly, the modification of AOAPA with the teachings of Dammert teach all of the claim limitations. Therefore, the examiner respectfully submits that a proper prima facie case of obviousness has been established.

With respect to argument B, the examiner respectfully traverses. It is unclear exactly the applicant is trying to convey. It appears that the applicant is trying to state that the claimed polymer composition contains hydrophilic groups within the composition. While this is correct for the final product of the claimed invention, clearly the polymer material is mixed with hydrophilic groups to establish the final polymer composition containing the hydrophilic groups. The applicant states this clearly on pages 6-7, lines 32-37 & 1-13 respectively. The Dammert reference also states that the

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crosslinkable polymer composition may be modified to contain inventive catalyst such as carboxylic acids salts (see page 5, lines, 21-25). Clearly, Dammert is achieving the same concept of the applicant claimed invention, by modifying the prior art composition to contain the same final product as the claimed invention (see page 5, lines 29-33).

Therefore, it is unclear what the applicant is trying to state, especially since the Dammert reference contains the same inventor, almost the same specification, and the same inventive concept as the present claimed invention. In light of the above comments, the examiner respectfully submits that the 35 USC 103(a) rejection is proper and just.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. They are Ikeda et al (Pat Num 6,479,590) and Fujikura (JP 2-305813), both of which disclose electrical insulations comprising a crosslinkable polymer has hydrophilic groups selected from siloxane, amide, anhydride, carboxylic, carbonyl, hydroxyl, and ester groups, and Kojima et al (Pat Num 4,237,334), which discloses a power cable comprising crosslinkable polymers comprising hydrophilic groups.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### ***Communication***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Mayo III whose telephone number is (703) 306-9061. The examiner can normally be reached on M-F 8:30am-6:00 pm (alternate Fridays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on (703) 308-3682. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications and (703) 305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

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A handwritten signature in black ink, appearing to be 'WHM III', written over a horizontal line.

WHM III

October 14, 2003